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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/228,894	01/11/1999	YOSHIHIRO ONO	P/3281-5	7984

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EXAMINER
TRAN, CON P

ART UNIT	PAPER NUMBER
2644	10

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/228,894	ONO, YOSHIHIRO	
	Examiner	Art Unit	
	Con P. Tran	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 February 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 January 1999* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *8* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. The drawings are objected to because the blocks in the drawing should be labeled. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sendyk et al. U.S. Patent 5,353,348 in view of Igai Kazunori JP 01-245661 (Admitted prior art).

Regarding **claim 1,** Sendyk et al. teaches a voice switching system (see Fig. 1, and respective portions of the specification), comprising:

a transmitting side attenuation section (26) for attenuating a microphone input voice signal (from microphone 12; see col. 4, lines 13-15) having a first level (after

passing A/D 16) to produce a transmitted voice signal having a second level (to D/A 28; see col. 4, lines 34-44);

a receiving side attenuation section (40) for attenuating a received voice signal having a third level (after passing A/D 36) to produce a speaker output voice signal having a fourth level (to D/A 18; see col. 4, line 56 –col. 5, line 3);

a transmitting side control section (including comparator 20 and variable gain control 30) for comparing the first level of the microphone (12) input voice signal with the fourth level of the speaker (14) output voice signal to obtain a first difference there between (col. 4, lines 19-24), the transmitting side control section controlling, dependent on the first difference, an amount of attenuation of the microphone input voice signal in the transmitting side attenuation section (see col. 5, lines 40-54); and

a receiving side control section (including comparator 32 and variable gain control 30) for comparing the second level of the transmitted voice signal (before reaching D/A converter 28) with the third level of the received voice signal (after passing A/D 36) to obtain a second difference there between (see col. 4, lines 45-55), the receiving side control section controlling, dependent on the second difference, an amount of attenuation of the received voice signal in the receiving side attenuation means (see col. 5, lines 40-54).

However, Sendyk et al. does not explicitly show receiving side control section distinct from the transmitting side control section. Separation of transmitting controllers and receiving controllers is well known in the art of echo cancellation. Sendyk et al. shows variable gain control 30 controls both transmit variable gain 26 and receive

variable gain 40. Thus one of ordinary skill would have been motivated to seek an echo cancellation embodiment in order to have separated controllers of an actual working arrangement taught by Sendyk et al. Such embodiments would have been any known echo cancellers such as one of Igai Kazunori in the same field of endeavor.

Igai Kazunori teaches voice switch control parts 10a, 10b (see Fig.1) control transmit signal and receive signal in order to improve quality of a calling (see Abstract). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was filing to modify Sendyk's variable controller by two separated controllers, as taught by Igai Kazunori, since such modification would have improved quality of a calling, as suggested by Igai Kazunori in Abstract.

Regarding **claim 8,** Sendyk et al. teaches a voice switching system (see Fig. 1, and respective portions of the specification), comprising:

a first receiver (16), which receives a first voice signal (from microphone; see col. 4, lines 13-15);

a first attenuation circuit (26), which receives the first voice, signal from the first receiver and produces a first attenuated signal (to D/A converter 28; see col. 4, lines 34-44);

a first control circuit (30) coupled to the first attenuation circuit; a second receiver which receives a second voice signal (26; see col. 4, lines 34-44);

a second attenuation circuit (40) which receives the second voice signal from the second receiver and produces a second attenuated signal (to D/A converter 18; see col. 4, line 56 –col. 5, line 3); and

a second control circuit (30; in combination with first control circuit) coupled to the second attenuation circuit (40; see col. 4, lines 34-44); wherein

the first control circuit (30) receives the first voice signal (from A/D converter 16 through comparator 30) and the second attenuated signal (also through comparator 30), the first control circuit (30) compares the first voice signal (from A/D converter 16) and the second attenuated signal (on line 19) and produces a first attenuation control signal (on line from 30 to 26) in response thereto, the first attenuation control signal controls an attenuation of the first attenuation circuit (26); and

the second control circuit (30; in combination with first control circuit) receives the second voice signal (from A/D converter 36 through comparator 32) and the first attenuated signal (also through comparator 32), the second control circuit (30) compares the second voice signal (from A/D converter 36) and the first attenuated signal (from 26 through comparator 32) and produces a second attenuation control signal (on line from 30 to 40) in response thereto, the second attenuation control signal controls an attenuation of the second attenuation circuit (40).

However, Sendyk et al. does not explicitly show a second control circuit distinct from the first control circuit. Separation of transmitting and receiving controllers is well known in the art of echo cancellation. Sendyk et al. shows variable gain control 30 controls both transmit variable gain 26 and receive variable gain 40. Thus one of

ordinary skill would have been motivated to seek an echo cancellation embodiment in order to have separated controllers of an actual working arrangement taught by Sendyk et al. Such embodiments would have been any known echo cancellers such as one of Igai Kazunori in the same field of endeavor.

Igai Kazunori teaches voice switch control parts 10a, 10b (see Fig.1) control transmit signal and receive signal in order to improve quality of a calling (see Abstract). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was filing to modify Sendyk's variable controller by two separated controllers, as taught by Igai Kazunori, since such modification would have improved quality of a calling as suggested by Igai Kazunori in Abstract.

4. **Claims 2, 4** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sendyk et al. U.S. Patent 5,353,348 in view of Igai Kazunori JP 01-245661 (Admitted prior art), in view of Lilja et al. U.S. Patent 5,787,165, and further in view of Furukawa et al. U.S. Patent 5,463,618.

Regarding **claim 2**, Sendyk et al. in view of Igai Kazunori teaches voice switching system as claimed in claim 1. However, Sendyk et al., Igai Kazunori in combination does not explicitly disclose the receiving side control section further comprising:

a transmitting side signal delay buffer for providing the transmitted voice signal with a delay time, the delay time corresponding to a time for which the

transmitted voice signal returns as the received voice signal through a communication line;

a transmitting side signal power estimation section for estimating a signal power of the transmitted voice signal outputted from the transmitting side signal delay buffer;

a receiving side signal power estimation section for estimating a signal power of the received voice signal.

In the same field of endeavor, Lilja et al. teaches (see Fig. 1, Table 1, and respective portions of the specification):

a transmitting side signal delay buffer (see col. 10, line 60 – col. 11 line 19) for providing the transmitted voice signal with a delay time, the delay time corresponding to a time for which the transmitted voice signal returns as the received voice signal through a communication line (see col. 13, lines 48-64);

a transmitting side signal power estimation section for estimating a signal power of the transmitted voice signal outputted (see col. 6, lines 43-52) from the transmitting side signal delay buffer (see col. 7, lines 1-23);

a receiving side signal power estimation section for estimating a signal power of the received voice signal (see col. 6, lines 53-62);
in order to determine which path has control and for dynamically controlling the path gain of both the send path and the receiver path (see col. 3, lines 57-59);

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included within the Sendyk et al., Igai Kazunori in

combination a voice switching system as taught by Lilja et al. since such combination would have determined which path has control and for dynamically controlling the path gain of both the send path and the receiver path as suggested by Lilja et al. in column 3, lines 57-59.

It should be noted that Sendyk et al., Igai Kazunori, and Lilja in combination fails to clearly teach:

a comparator for comparing the estimated signal power of the transmitted voice signal estimated by the transmitting side signal power estimation section with the estimated signal power of the received voice signal estimated by the receiving side signal power estimation section to obtain a ratio there between; and

a first attenuation amount calculation section for calculating an amount of attenuation in the receiving side attenuation section based on the ratio outputted from the first comparator.

In the same field of endeavor, Furukawa et al. teaches (see Fig. 1, 2, and respective portions of the specification):

a first comparator (213) for comparing a primary estimated signal power of the transmitted voice signal estimated by the transmitting side signal power estimation section with a secondary estimated signal power of the received voice signal estimated by the receiving side signal power estimation section to obtain a ratio there between (see col. 7, lines 5-39); and

a first attenuation amount calculation section for calculating an amount of attenuation in the receiving side attenuation section based on the ratio outputted from the first comparator (see col. 14, lines 7-13);

in order to be able to improve the tracking performance to echo path changes (see col. 4, lines 7-13).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included within the Sendyk et al., Igai Kazunori, and Lilja in combination a voice switching system, as taught by Furukawa et al., since such combination would have been able to improve the tracking performance to echo path changes as suggested by Furukawa et al. in column 4, lines 7-13

Regarding **claim 4**, Sendyk et al. in view of Igai Kazunori teaches a voice switching system as claimed in claim 1. However, Sendyk et al., Igai Kazunori in combination does not explicitly disclose a transmitting side controller further comprising:

a microphone input power estimation section for estimating a signal power of the microphone input voice signal;

a speaker output signal delay buffer for providing the speaker output voice signal with a delay time, the delay time corresponding to a time for which a voice outputted from the speaker becomes the microphone input voice signal by a sound coupling with the microphone.

In the same field of endeavor, Lilja et al. further teaches (see Fig. 1, and respective portions of the specification):

a microphone (175) input power estimation section for estimating a signal power of the microphone input voice signal (see col. 5, lines 44-49);

a speaker output signal delay buffer for providing the speaker output voice signal with a delay time, the delay time corresponding to a time for which a voice outputted from the speaker becomes the microphone input voice signal by a sound coupling with the microphone (see col. 10, lines 51-65);

It should be noted that Sendyk et al., Igai Kazunori, and Lilja in combination fails to clearly teach:

a first speaker output power estimation section for estimating a signal power of the speaker output voice signal outputted from the speaker output signal delay buffer;

a comparator for comparing an estimated signal power of the microphone input voice signal estimated by the microphone input power estimation section with an estimated signal power of the speaker output voice signal estimated by the first speaker output power estimation section to obtain a ratio there between; and

an attenuation amount calculation section for calculating an amount of attenuation in the transmitting side attenuation section based on the ratio outputted from the second comparator.

In the same field of endeavor, Furukawa et al. further teaches (see Fig. 1, 2, and respective portions of the specification):

a first speaker output power estimation section (6) for estimating a signal power of the speaker output voice signal outputted from the speaker output signal delay buffer (see col. 5, lines 53-56 and col. 7, lines 40-45);

a comparator for comparing an estimated signal power of the microphone input voice signal estimated by the microphone input power estimation section with an estimated signal power of the speaker output voice signal estimated by the first speaker output power estimation section to obtain a ratio there between (see col. 7, lines 5-39); and

an attenuation amount calculation section for calculating an amount of attenuation in the transmitting side attenuation section based on the ratio outputted from the second comparator (see col. 14, lines 7-13 and col. 7, lines 40-45).

5. **Claims 3 and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sendyk et al. U.S. Patent 5,353,348 in view of Igai Kazunori JP 01-245661 (Admitted prior art), in view of Lilja et al. U.S. Patent 5,787,165, further in view of Furukawa et al. U.S. Patent 5,463,618, and further in view of Fujii et al. U.S. Patent 5,940,499.

Regarding **claim 3**, Sendyk in view of Igai Kazunori, in view of Lilja, and further in view of Furukawa teaches voice switching system as claimed in claim 2. However, Sendyk, Igai Kazunori, Lilja, and Furukawa in combination does not explicitly disclose a voice switching system wherein:

the receiving voice signal inputted to the receiving side signal power estimation section is silent at the initial time when the voice signal is inputted to the transmitting side signal delay buffer.

In the same field of endeavor, Fujii et al. teaches (see Fig. 2, and respective portions of the specification):

the receiving voice signal inputted to the receiving side signal power estimation section is silent at the initial time when the receiving voice signal inputted to the receiving side signal power estimation section is silent at the initial time when the transmitted voice signal is inputted to the transmitting side signal delay buffer (see col. 3, lines 52-63) in order to provide a conversation as smooth as one taking place when a handset is used (see col. 1, lines 44-46).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included within the Sendyk, Igai Kazunori, Lilja and Furukawa in combination a voice switching system, as taught by Fujii, since such combination would have provided a conversation as smooth as one taking place when a handset is used as suggested by Fujii et al. in column 1, lines 44-46.

Regarding **claim 5**, Sendyk in view of Igai Kazunori, in view of Lilja and further in view of Furukawa in combination teaches voice switching system as claimed in claim 4.

However, Sendyk, Igai Kazunori, Lilja and Furukawa in combination does not explicitly disclose a voice switching system wherein the microphone input voice signal inputted to the microphone input power estimation section is silent at the initial time

when the speaker output voice signal is inputted to the speaker output signal delay buffer.

In the same field of endeavor, Fujii et al. further teaches (see Fig. 2, and respective portions of the specification):

a microphone input voice signal inputted to the microphone input power estimation section is silent at the initial time when the speaker output voice signal is inputted to the speaker output signal delay buffer (see col. 3, lines 52-63).

6. **Claims 6 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sendyk et al. U.S. Patent 5,353,348 in view of Igai Kazunori JP 01-245661 (Admitted prior art), and further in view of Furukawa et al. U.S. Patent 5,463,618.

Regarding **claim 6**, Sendyk further teaches the transmitting side control section further comprising (Fig. 1, and respective portions of the specification):

a residual echo power estimation section for estimating a signal power of a residual echo signal obtained by the microphone input voice signal passing through an acoustic echo canceller (see col. 4, lines 25-14);

a second speaker output power estimation section for estimating a signal power of the speaker output voice signal passing through the acoustic echo canceller (see col. 4, line 56 – col. 5, lines 3);

However, Sendyk et al. in view of Igai Kazunori does not explicitly disclose:

a third comparator for comparing an estimated signal power of the residual echo signal estimated by the residual echo power estimation section with an estimated signal power of the speaker output voice signal estimated by the second speaker output power estimation section to obtain a ratio there between; and

a third attenuation amount calculation section for calculating an amount of attenuation in the transmitting side attenuation section based on the ratio outputted from the third comparator.

In the same field of endeavor, Furukawa et al. further teaches (see Fig. 1, 2, and respective portions of the specification):

a third comparator for comparing an estimated signal power of the residual echo signal estimated by the residual echo power estimation section with an estimated signal power of the speaker output voice signal estimated by the second speaker output power estimation section to obtain a ratio there between (see col. 5, line 66 – col. 6, line 12); and

a third attenuation amount calculation section for calculating an amount of attenuation in the transmitting side attenuation section based on the ratio outputted from the third comparator (see col. 5, line 66 – col. 6, line 12).

Regarding **claim 7,** Furukawa et al. further teaches (see Fig. 16 and respective portions of the specification) a voice switching system as claimed in claim 6, wherein the acoustic echo canceller sequentially renews an adaptive filter coefficient stored in an adaptive filter coefficient buffer by the use of the residual echo signal and a value of

an adaptive filter tap input buffer (see col. 17, lines 32-50), the residual echo signal being outputted from a subtractor to which the microphone input voice signal is inputted, and wherein a sum of products between the adaptive filter coefficient of the adaptive filter coefficient buffer and the value of the adaptive filter tap input buffer and the value of the adaptive filter tap input buffer is calculated in a sum of products operator (see col. 16, lines 26-36), a result of the calculation being subtracted by the subtractor from the microphone input voice signal, thereby the residual echo signal being outputted (see col. 17, line 51 – col. 18, line 7).

7. **Claims 9, 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sendyk et al. U.S. Patent 5,353,348 in view of Igai Kazunori JP 01-245661 (Admitted prior art), in view of Lilja et al. U.S. Patent 5,787,165, and further in view of Furukawa et al. U.S. Patent 5,463,618.

Regarding **claim 9**, Sendyk et al. in view of Igai Kazunori teaches the voice switching system as recited in claim 8. However, Sendyk et al., Igai Kazunori in combination does not explicitly disclose the voice switching system further comprising:

a buffer which receives the second attenuated signal, and delays the second attenuated signal with a delay time substantially equal to a time for the second attenuated signal to travel from the second attenuation circuit to the first attenuation circuit through a communication line, thereby producing a delayed second attenuated signal;

a first power estimation section coupled to the buffer, the first power estimation section estimates a power of the delayed second attenuated signal and produces an output in response thereto;

a second power estimation section which receives the first voice signal, estimates a power of the first voice signal and produces an output in response thereto;

In the same field of endeavor, Lilja et al. teaches (see Fig. 1, Table 1, and respective portions of the specification):

a buffer which receives the second attenuated signal, and delays the second attenuated signal with a delay time substantially equal to a time for the second attenuated signal to travel from the second attenuation circuit to the first attenuation circuit through a communication line (see col. 10, line 60 – col. 11 line 19), thereby producing a delayed second attenuated signal (see col. 13, lines 48-64);

a first power estimation section coupled to the buffer, the first power estimation section estimates a power of the delayed second attenuated signal (see col. 7, lines 1-23) and produces an output in response thereto (see col. 6, lines 43-52);

a second power estimation section which receives the first voice signal, estimates a power of the first voice signal and produces an output in response thereto (see col. 6, lines 53-62);

in order to determine which path has control and for dynamically controlling the path gain of both the send path and the receiver path (see col. 3, lines 57-59);

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included within the Sendyk et al., Igai Kazunori in

combination voice switching system as taught by Lilja et al. since such combination would have determined which path has control and for dynamically controlling the path gain of both the send path and the receiver path as suggested by Lilja et al. in column 3, lines 57-59.

It should be noted that Sendyk, Igai Kazunori and Lilja in combination fails to clearly teach:

a comparator which receives and compares the outputs of the first and second power estimation sections and produces an output in response thereto;

and an attenuation amount calculation section which receives the output of the comparator and produces the first attenuation control signal in response thereto.

In the same field of endeavor, Furukawa et al. teaches (see Fig. 1, 2, and respective portions of the specification):

a comparator (213) which receives and compares the outputs of the first and second power estimation sections and produces an output in response thereto (see col. 7, lines 5-39); and

an attenuation amount calculation section which receives the output of the comparator and produces the first attenuation control signal in response thereto (see col. 14, lines 7-13);

in order to be able to improve the tracking performance to echo path changes (see col. 4, lines 7-13).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included within the Sendyk, Igai Kazunori and Lilja

in combination a voice switching system, as taught by Furukawa et al., since such combination would have been able to improve the tracking performance to echo path changes as suggested by Furukawa et al. in column 4, lines 7-13.

Regarding **claim 10**, Sendyk et al. in view of Igai Kazunori teaches the voice switching system as recited in claim 8. However, Sendyk et al., Igai Kazunori in combination does not explicitly disclose the voice switching system further comprising:

a first power estimation section which receives the second voice signal, estimates a power of the second voice signal and produces an output in response thereto;

a buffer which receives the first attenuated signal, and delays the first attenuated signal with a delay time substantially equal to a time for the first attenuated signal to travel from a speaker connected to the first attenuation circuit to the second receiver (see col. 10, line 60 – col. 11 line 19), thereby producing a delayed first attenuated signal (see col. 13, lines 48-64);

a second power estimation section coupled to the buffer, the second power estimation section estimates a power of the delayed first attenuated signal and produces an output in response thereto.

In the same field of endeavor, Lilja et al. teaches (see Fig. 1, Table 1, and respective portions of the specification):

a first power estimation section which receives the second voice signal, estimates a power of the second voice signal and produces an output in response thereto (see col. 6, lines 53-62);

a buffer which receives the first attenuated signal, and delays the first attenuated signal with a delay time substantially equal to a time for the first attenuated signal to travel from a speaker connected to the first attenuation circuit to the second receiver, thereby producing a delayed first attenuated signal;

a second power estimation section coupled to the buffer, the second power estimation section estimates a power of the delayed first attenuated signal (see col. 7, lines 1-23) and produces an output in response thereto (see col. 6, lines 43-52).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included within the Sendyk et al., Igai Kazunori in combination a voice switching system as taught by Lilja et al. since such combination would have determined which path has control and for dynamically controlling the path gain of both the send path and the receiver path as suggested by Lilja et al. in column 3, lines 57-59.

It should be noted that Sendyk, Igai Kazunori and Lilja in combination fails to clearly teach:

a comparator which receives and compares the outputs of the first and second power estimation sections and produces an output in response thereto;

and an attenuation amount calculation section which receives the output of the comparator and produces the first attenuation control signal in response thereto.

In the same field of endeavor, Furukawa et al. teaches (see Fig. 1, 2, and respective portions of the specification):

a comparator (213) which receives and compares the outputs of the first and second power estimation sections and produces an output in response thereto (see col. 7, lines 5-39); and

an attenuation amount calculation section which receives the output of the comparator and produces the first attenuation control signal in response thereto (see col. 14, lines 7-13);

in order to be able to improve the tracking performance to echo path changes (see col. 4, lines 7-13).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included within the Sendyk, Igai Kazunori and Lilja in combination a voice switching system, as taught by Furukawa et al., since such combination would have been able to improve the tracking performance to echo path changes as suggested by Furukawa et al. in column 4, lines 7-13.

Response to Arguments

8. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new grounds of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Con P. Tran, whose telephone number is (703) 305-2341. The examiner can normally be reached on M - F (8:30 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Customer Service Office at telephone number (703) 306-0377.

cpt CPJ
May 16, 2003

FORESTER W. ISEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600